New graphic schemes for Stata: plotplain and plottig

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Abstract: While Stata's computational capabilities have intensively increased over the last decade, the quality of its default graphic schemes is still a matter of debate among users. Some of the arguments speaking against Stata's default graphic design are subject to individual taste but others are not, for example, horizontal labeling, unnecessary background tinting, missing gridlines, and oversized markers. In this article, I present two new graphic schemes, plotplain and plottig, that attempt to address these concerns. These schemes provide users a set of 21 colors, of which 7 colors are distinguishable for people suffering from color blindness. I also give an introduction on how users can program their own graphic schemes.

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New Figure Schemes for Stata: plotplain & plottig

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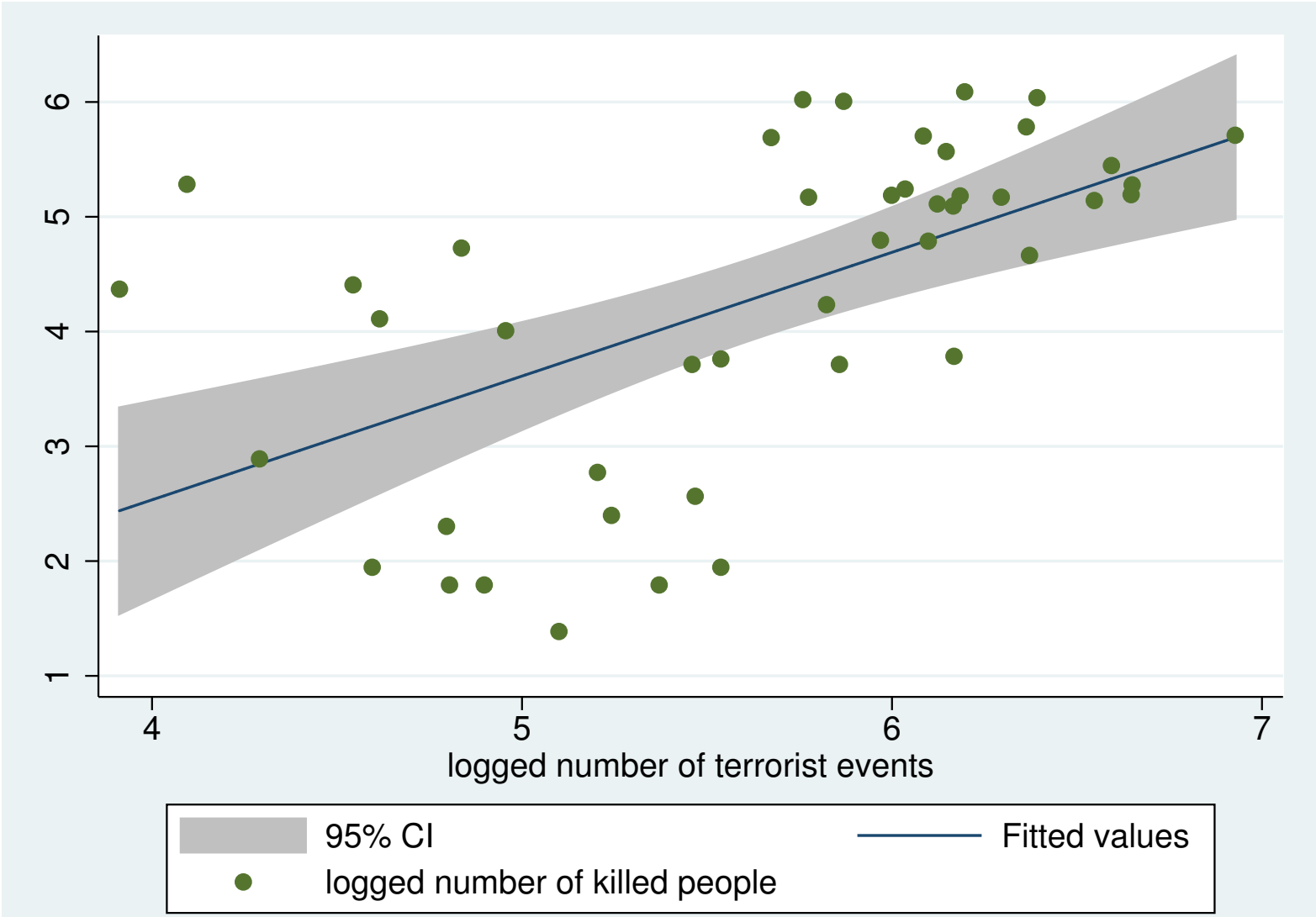
The Default Stata Figure Schemes



Limitations

- colors are difficult to differentiate for colorblind people
- background tinting
- frames
- symbols, markers, lines often too thick
- gridlines only parallel to x-axis
- legends could be placed closer to content of figure

Solutions

1. the obvious solution is to produce code

Solutions

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Solutions


```
twoway ///
(line numcountries year, lcolor(gs12)) ///
, ylabel(, angle(horizontal)) xtitle("") ///
graphregion(fcolor(white) lcolor(white)
lwidth(vvvthick) ifcolor(white)
ilcolor(white) ilwidth(vvvthick)) ///
plotregion(lcolor(white) lwidth(vvvthick)
ifcolor(white) ilcolor(white)
ilwidth(vvvthick)) ///
legend(cols(1) region(lcolor(white)))
```

Solutions

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2. use Billy Buchanan's `brewscheme` to define your own designs

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1. the obvious solution is to produce code; lot's of code ...
2. use Billy Buchanan's `brewscheme` to define your own designs
3. **write a new package addressing some of the key limitations**

Why write a new figure scheme?

- ! time
- ! ensure quality (create uniform norm)
- ! simplify the usage of more and new colors
- ! many users lack knowledge how to adapt figures

$\Rightarrow$ there seems to be a high demand for new and alternative figure schemes

Solution 3: Write a new figure scheme

I wrote 2 figure schemes:

- **plotplain:** very simple, "clean" figure scheme
- **plottig:** replicates ggplot2 (R) by Hadley Wickham in most regards

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→ both available with colors distinguishable for colorblind people

Solution 3: blindschemes in the SSC Archive

package **blindschemes** from http://fmwww.bc.edu/RePEc/bocode/b

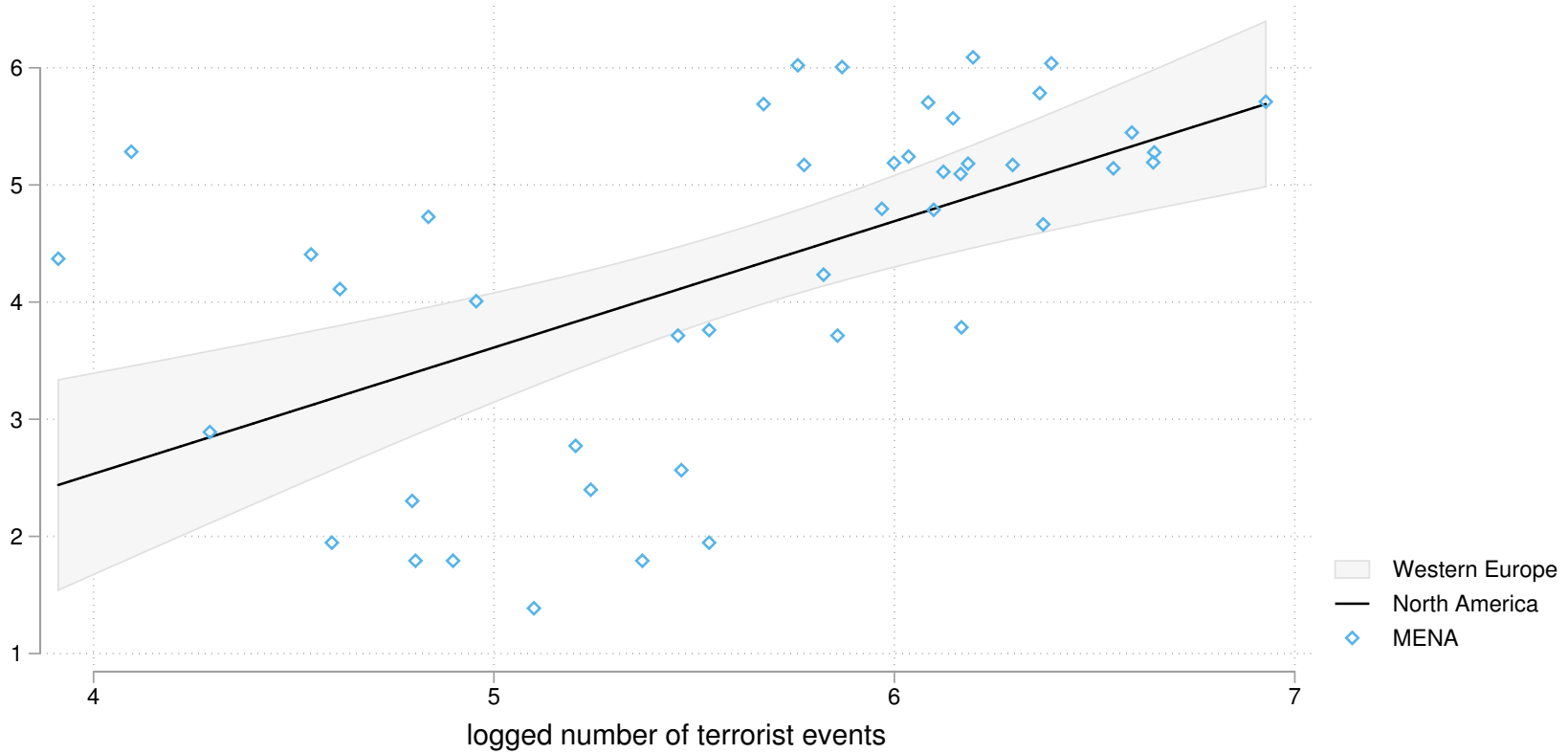
TITLE

'BLINDSCHEMES': module to provide graph schemes sensitive to color vision deficiency

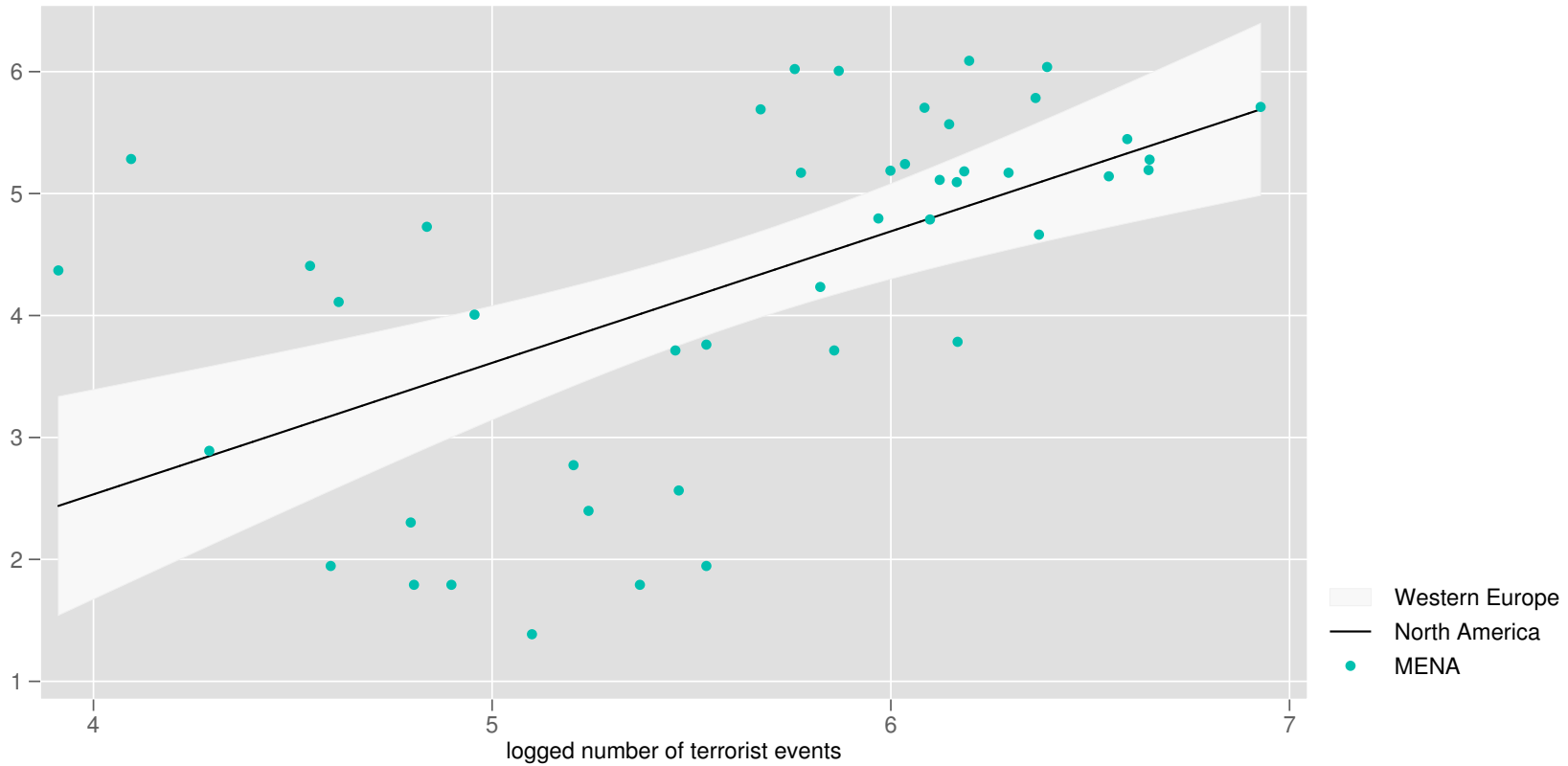
DESCRIPTION/AUTHOR(S)

While Stata's computational capabilities have intensively increased over the last decade, the quality of its default figure schemes is still a matter of debate amongst users. Clearly some of the arguments speaking against Stata figures are subject to individual taste, but others are not, such as for instance: horizontal labelling, unnecessary background tinting, missing gridlines, oversized markers. The two schemes introduced here attempt to solve the major shortcomings of Stata's default figure schemes. The schemes come with 21 new colors, of which seven colors are distinguishable for people suffering from color blindness. This package provides users with four new figure schemes: plotplain (plain and simple plotting environment, avoids chartjunk); plotplainblind (plain and simple plotting environment, avoids chartjunk + colorblind friendly); plottig (replicates R ggplot in most regards); plottigblind (replicates R ggplot in most regards + colorblind friendly)

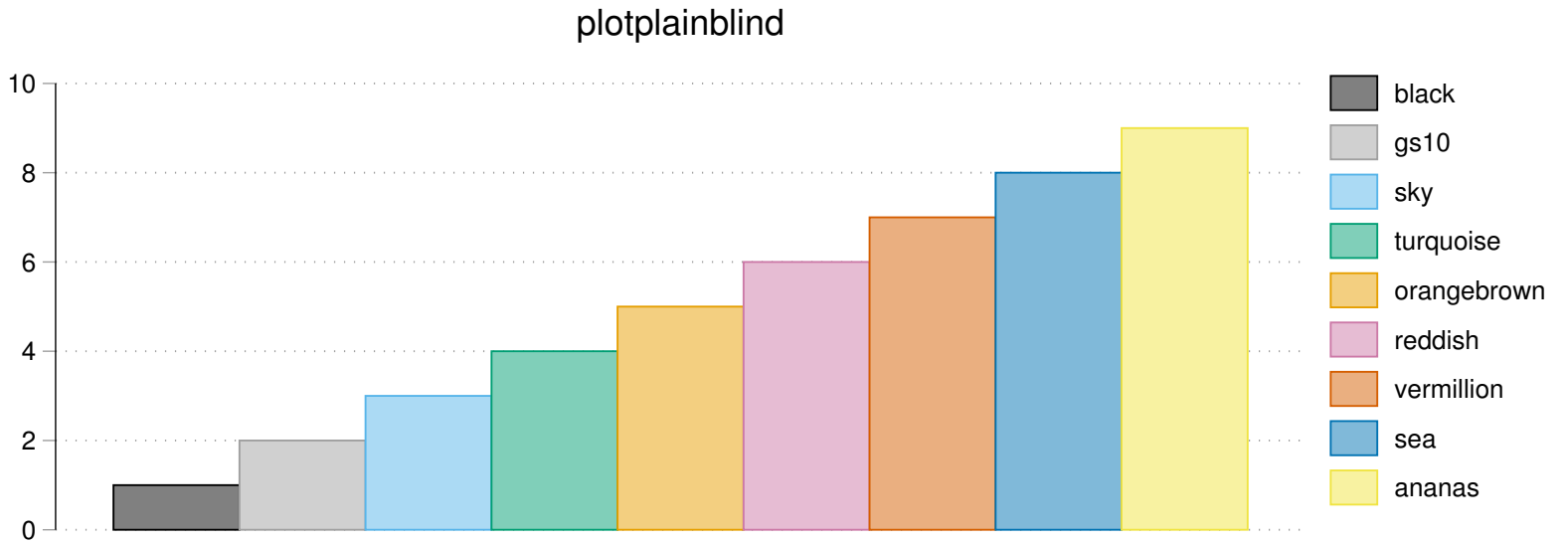
Plotplain

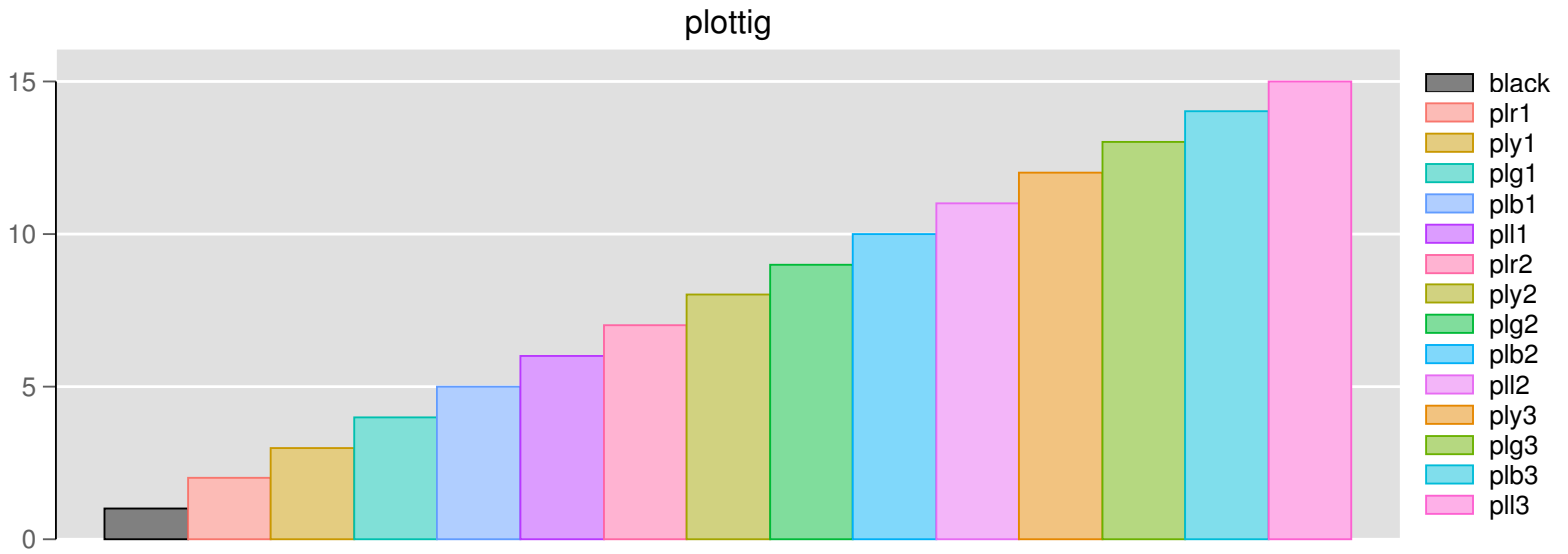


Plottig



The colorblind colors

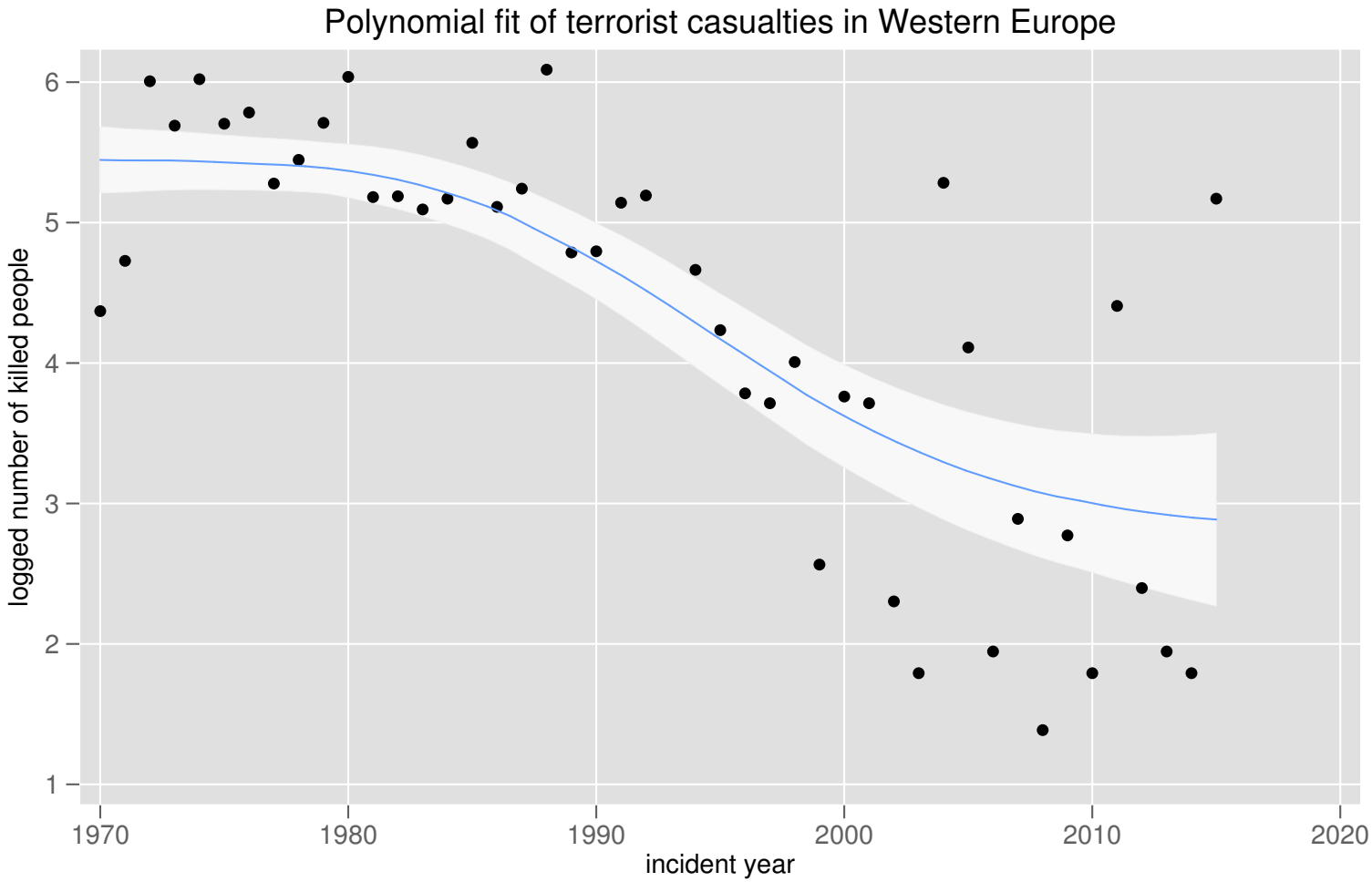




Adaptation of Code: Gridlines


```
lpoly nkill iyear if region==12, ///
ci legend(off) title("Polynomial fit of terrorist
casualties in Western Europe") ///
note("")
```

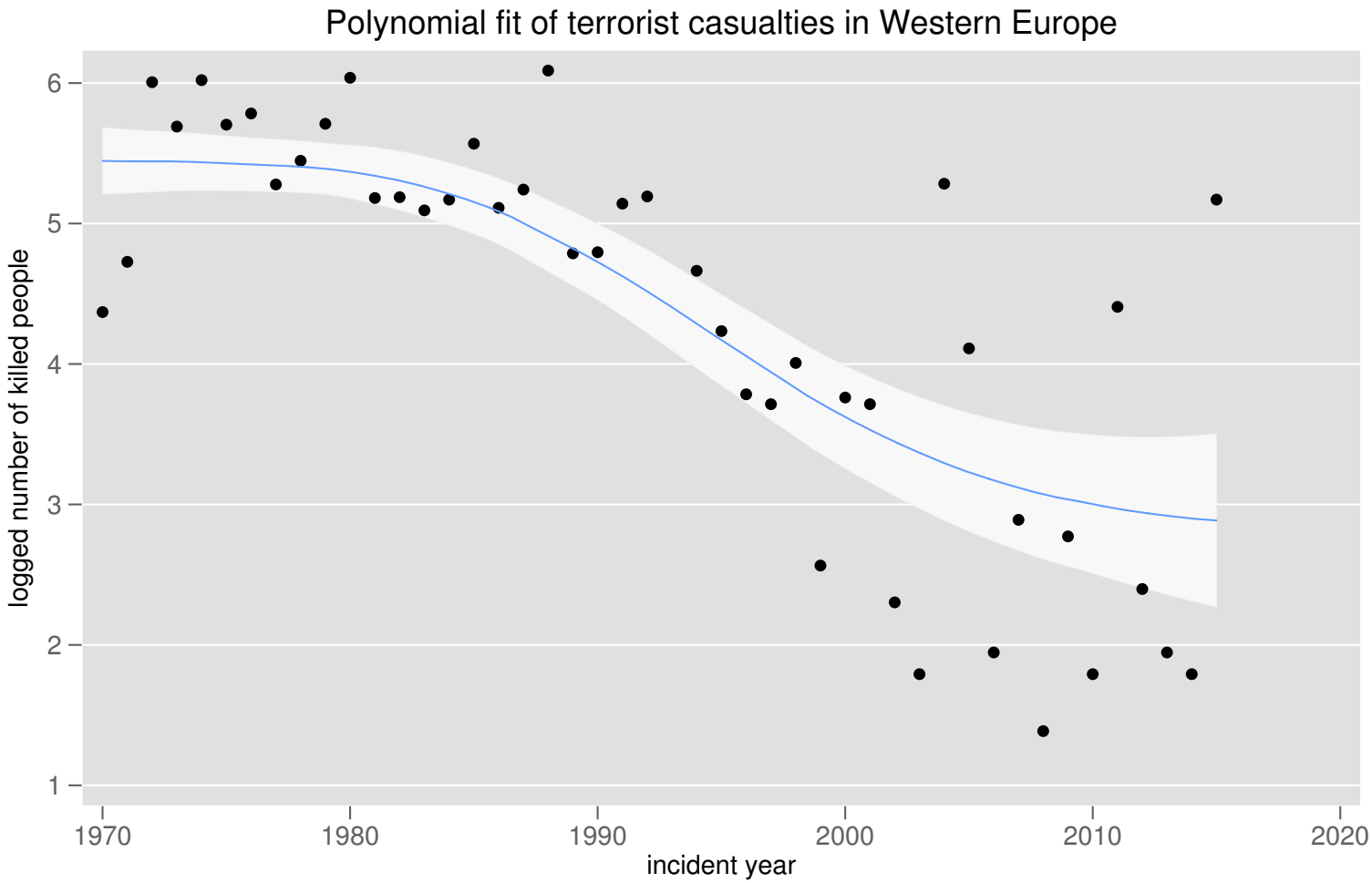
Adaptation of Code: Gridlines



Adaptation of Code: Gridlines


```
lpoly nkill iyear if region==12, ///
ci legend(off) title("Polynomial fit of terrorist
casualties in Western Europe") ///
note("") xlabel(, nogrid)
```

Adaptation of Code: Gridlines



Conclusion

+ Improvement: Less code needed, users can focus on other tasks
+ Disagreement: Even if you disagree, less changes are needed for further adaptation
- Concerns: Still issues remain, e.g. overlapping confidence intervals
- For further information including the working paper on the schemes:

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